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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,240	06/29/2006	Jeoung-Jun Hwang	7045P003	9202

8791 7590 09/09/2008
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EXAMINER

LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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09/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,240	Applicant(s) HWANG ET AL.	
	Examiner GREGORY LISTVOYB	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/21/2008 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 3-6 rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al (US 2002/0049285) herein Abe in combination with Phelps et al (US 6436548) herein Phelps as evidences by Kotelnikov et al (RU 2070896) herein Kotelnikov.

Abe disclose a method for preparation of polyester copolymer having amide links comprising copolymerizing a cyclic amide (i.e. caprolactam, see line 0023, meeting the limitations of Claim 5) and a cyclic ester with carbon atom number of C3-C12 (see line

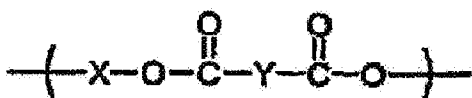
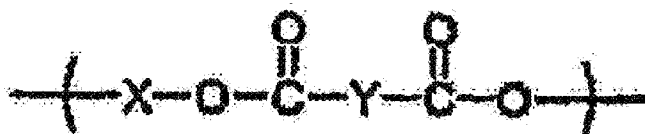
Art Unit: 1796

0068)., where the amount of the ester is within the range of 1-99% (see line 0037, meeting the limitations of Claim 6).

Abe does not disclose that his cyclic ester is oligoester.

Phelps discloses a macrocyclic polyester and method of its preparation (see Abstract).

Phelps discloses macrocyclic polyester oligomer includes the repeating unit of the following formula:



(see column 4, line 15), (which is identical to one claimed in claim 1)

where X represents alkylene radical or oxyalkylene radical having more than 2 Carbon atoms (see Column 3, line 10), and Y represents aromatic or alicyclic radical, and the number of the repeating unit in the macrocyclic polyester oligomer is 2 to 20 (see Column 4, line 20).

Regarding Claims 3 and 4, Phelps discloses a method for preparing polyester Copolymer where the macrocyclic polyester oligomer is obtained by reacting

Art Unit: 1796

bis(hydroxyalkyl)ester, with dicarboxylic acid chloride in the presence of unhindered amine (see Column 4, line 35) and alternative method where the bis(hydroxyalkyl)ester is obtained by depolymerizing polyester resin (see Column 4, line 55).

Macrocyclic polyesters possess very low melt viscosity, which makes them desirable in forming melted articles with complex shapes (see Phelps, Column 1, line 30). In addition, low melt viscosity makes the process more economical, since lower energy needed to process the polymer.

Therefore, it would have been obvious to a person of ordinary skills in the art to use Phelps's macrocyclic polyesters in Abe's compositions in order to produce articles with complex shapes and make the process more economical by lowering energy consumption.

Abe does not disclose newly added limitation of claim 1 where the polymerization is carried out in the presence of a catalyst selected from the group consisting of antimony-based catalyst, germanium-based catalyst and titanium-based catalyst.

Regarding newly added limitation of claim 1, Phelps teaches organotitanane compound as a preferred catalyst (see Column 8, line 20).

Kotelnikov teaches anionic polymerization of caprolactam with organotitanate as a catalyst (see Abstract). Kotelnikov evidences that use of titanium-based catalysts in place of traditionally used Zn, Ca, Na –based catalysts (used by Abe) increases purity of the polymer and allows decrease a reaction temperature (see page 2, line 50 and page 3, line 5).

Therefore, it would have been obvious to a person of ordinary skills in the art to use organotitanium compounds in place of traditional Zn, Ca, Na –based catalysts in Abe's process in order to increase purity of the product and decrease reaction temperature.

Response to Arguments

Applicant's arguments filed on 8/21/2008 have been fully considered but they are not persuasive.

Applicant argues that it would not have been obvious to a person of ordinary skill in the art to select (i) a cyclic amide monomer and (ii) macrocyclic polyester oligomer from various amides and various polyesters to achieve the reduced phase separation and improved transparency achieved by the method of claim 1.

However, as stated in the previous Office Action, macrocyclic polyesters possess very low melt viscosity, which makes them desirable in forming melted articles with

Art Unit: 1796

complex shapes (see Phelps, Column 1, line 30). Abe teaches that his material aims to use as a molded articles in electronic applications, which can have complex shapes.

Therefore, it is desirable to have low viscosity of the melt to avoid high pressure/temperature during the processing of the above articles. In order to achieve the above properties, oligoester with low melt viscosity of Phelps can be used.

Applicant's arguments regarding disclose newly added limitation of claim 1 where the polymerization is carried out in the presence of a catalyst selected from the group consisting of antimony-based catalyst, germanium-based catalyst and titanium-based catalyst are moot due to a new ground of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1796

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

GL